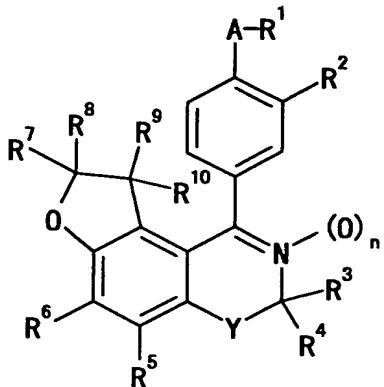


## CLAIMS

## 1. A compound represented by the formula



wherein A represents (1) a bond, (2) a group represented by  
 5 the formula  $-\text{CR}^{\text{a}}=\text{CR}^{\text{b}}-$  ( $\text{R}^{\text{a}}$  and  $\text{R}^{\text{b}}$  each represent a hydrogen atom or a  $\text{C}_{1-6}$  alkyl group), (3) a group represented by the formula  $-(\text{CONH})_p-(\text{C}(\text{R}^{\text{c}})(\text{R}^{\text{d}}))_q-$  ( $\text{R}^{\text{c}}$  and  $\text{R}^{\text{d}}$  each represent a hydrogen atom or a  $\text{C}_{1-6}$  alkyl group, p represents 0 or 1 and q represents 1 or 2), (4) a group represented by the formula  $-\text{CH}_2\text{OCH}_2-$  or (5) a group  
 10 represented by the formula  $-\text{OCH}_2-;$

$\text{R}^1$  represents (1) a cyano group or (2) an optionally esterified or amidated carboxyl group;

$\text{R}^2$  represents (1) a hydrogen atom, (2) an optionally substituted hydroxy group, (3) an optionally substituted amino group, (4) an optionally substituted alkyl group, (5) an optionally esterified or amidated carboxyl group or (6) a nitro group, or  $\text{R}^2$  and A or  $\text{R}^1$  may be taken together with the adjacent carbon atom to form a ring;

$\text{R}^3$  and  $\text{R}^4$  each represent (1) a hydrogen atom, (2) an optionally substituted hydrocarbon group or (3) an acyl group, or  $\text{R}^3$  and  $\text{R}^4$  may be taken together with the adjacent carbon atom to form an optionally substituted 3- to 8-membered ring;

$\text{R}^5$  represents (1) a hydrogen atom, (2) a cyano group, (3) an optionally substituted hydrocarbon group, (4) an acyl group or (5) an optionally substituted hydroxy group;

$\text{R}^6$  represents (1) a hydrogen atom, (2) an optionally substituted hydrocarbon group, (3) an acyl group, (4) an

optionally substituted heterocyclic group, (5) a halogen atom, (6) an optionally substituted hydroxy group, (7) an optionally substituted thiol group, (8) a group represented by the formula -S(O)<sub>r</sub>R<sup>11</sup> (R<sup>11</sup> represents an optionally substituted hydrocarbon

5 group or an optionally substituted heterocyclic group and r is 1 or 2) or (9) an optionally substituted amino group;

R<sup>7</sup> and R<sup>8</sup> each represent (1) a hydrogen atom or (2) an optionally substituted hydrocarbon group, or R<sup>7</sup> and R<sup>8</sup> may be taken together with the adjacent carbon atom to form an optionally 10 substituted 3- to 8-membered ring;

R<sup>9</sup> and R<sup>10</sup> each represent (1) a hydrogen atom or (2) an optionally substituted hydrocarbon group;

Y represents an optionally substituted methylene group; and n represents 0 or 1,

15 provided that if A is a bond, R<sup>2</sup> is not a hydrogen atom, and if A is a group represented by the formula -(CONH)<sub>p</sub>-(C(R<sup>c</sup>)(R<sup>d</sup>))<sub>q</sub>- (R<sup>c</sup> and R<sup>d</sup> each represent a hydrogen atom or a C<sub>1-6</sub> alkyl group, p represents 0 or 1 and q represents 1 or 2), R<sup>6</sup> is not methoxy, or a salt thereof.

20

2. The compound according to claim 1, wherein R<sup>1</sup> is (i) a cyano group, (ii) a carboxyl group, (iii) a C<sub>1-6</sub> alkoxy-carbonyl group which may have 1 to 5 substituents selected from a group consisting of (1) a halogen atom, (2) a C<sub>1-3</sub> alkylenedioxy group, 25 (3) a nitro group, (4) a cyano group, (5) an optionally halogenated C<sub>1-6</sub> alkyl group, (6) an optionally halogenated C<sub>2-6</sub> alkenyl group, (7) an optionally halogenated C<sub>2-6</sub> alkynyl group, (8) a C<sub>3-8</sub> cycloalkyl group, (9) a C<sub>6-14</sub> aryl group, (10) an optionally halogenated C<sub>1-6</sub> alkoxy group, (11) an optionally 30 halogenated C<sub>1-6</sub> alkylthio group, (12) a hydroxy group, (13) an amino group, (14) a mono-C<sub>1-6</sub> alkylamino group, (15) a mono-C<sub>6-14</sub> arylamino group, (16) a di-C<sub>1-6</sub> alkylamino group, (17) a di-C<sub>6-14</sub> arylamino group, (18) an acyl group selected from formyl, carboxyl, carbamoyl, C<sub>1-6</sub> alkyl-carbonyl, C<sub>3-8</sub> cycloalkyl-carbonyl, C<sub>1-6</sub> 35 alkoxy-carbonyl, C<sub>6-14</sub> aryl-carbonyl, C<sub>7-16</sub> aralkyl-carbonyl, C<sub>6-14</sub>

aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl,

5 mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$

10 aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$  alkyl-

15 thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$

20 arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl, sulfino, sulfo,  $C_{1-6}$  alkoxy sulfinyl,  $C_{6-14}$  aryloxy sulfinyl,  $C_{1-6}$  alkoxy sulfonyl and  $C_{6-14}$  aryloxy sulfonyl, (19) an acylamino group selected from formylamino,  $C_{1-6}$  alkyl-carboxamide,  $C_{6-14}$  aryl-carboxamide,  $C_{1-6}$  alkoxy-

25 carboxamide,  $C_{1-6}$  alkylsulfonylamino and  $C_{6-14}$  arylsulfonylamino, (20) an acyloxy group selected from  $C_{1-6}$  alkyl-carbonyloxy,  $C_{6-14}$  aryl-carbonyloxy,  $C_{1-6}$  alkoxy-carbonyloxy, mono- $C_{1-6}$  alkyl-carbamoyloxy, di- $C_{1-6}$  alkyl-carbamoyloxy, mono- $C_{6-14}$  aryl-carbamoyloxy, di- $C_{6-14}$  aryl-carbamoyloxy and nicotinoyloxy, (21) a

30 5- to 14-membered heterocyclic group containing 1 to 4 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, (22) a phosphono group, (23) a  $C_{6-14}$  aryloxy group, (24) a di- $C_{1-6}$  alkoxy-phosphoryl group, (25) a  $C_{6-14}$  arylthio group, (26) a hydrazino group, (27) an imino group,

35 (28) an oxo group, (29) an ureido group, (30) a  $C_{1-6}$  alkyl-ureido

group, (31) a di- $C_{1-6}$  alkyl-ureido group, (32) an oxide group and (33) a group formed by binding of 2 or 3 groups selected from (1) to (32) listed above and the like (hereinafter, abbreviated as Substituent group A), (iv) a  $C_{3-8}$  cycloalkyloxy-carbonyl group 5 which may have 1 to 5 substituents selected from Substituent group A described above, (v) a  $C_{7-16}$  aralkyloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (vi) a  $C_{6-14}$  aryloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described 10 above, (vii) a carbamoyl group, (viii) a mono- $C_{1-6}$  alkyl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above, (ix) a di- $C_{1-6}$  alkyl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above, (x) a mono- $C_{6-14}$  aryl-carbamoyl group which may 15 have 1 to 5 substituents selected from Substituent group A described above or (xi) a di- $C_{6-14}$  aryl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above,

$R^2$  is (i) a hydrogen atom, (ii) a group represented by the 20 formula  $-OR^{12}$  ( $R^{12}$  represents (a) a hydrogen atom, (b) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, or (c) an acyl group selected from formyl, 25 carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to 30 carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl- 35 thiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$

aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,

5 thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,

10 sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$  alkoxyssulfinyl,  $C_{6-14}$  aryloxyssulfinyl,  $C_{1-6}$  alkoxyssulfonyl and  $C_{6-14}$  aryloxyssulfonyl, which may have 1 to 5 substituents selected from Substituent group

15 A described above), (iii) a group represented by the formula -  $NR^{13}R^{14}$  ( $R^{13}$  and  $R^{14}$  are each (i') a hydrogen atom, (ii') a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent

20 group A described above, (iii') an acyl group selected from formyl, carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from

25 a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition

30 to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a

35 sulfur atom and an oxygen atom in addition to carbon atoms,

thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a

5 sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$  alkoxysulfinyl,  $C_{6-14}$  aryloxysulfinyl,  $C_{1-6}$  alkoxysulfonyl and  $C_{6-14}$  aryloxysulfonyl,

10 which may have 1 to 5 substituents selected from Substituent group A described above or (iv') a 5- to 14-membered heterocycle containing 1 to 4 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A

15 described above, or  $R^{13}$  and  $R^{14}$  may be taken together with the adjacent a nitrogen atom to form a 5- to 14-membered ring), (iv) a  $C_{1-6}$  alkylideneamino group which may have 1 to 5 substituents selected from Substituent group A described above, (v) a  $C_{1-6}$  alkyl group which may have 1 to 5 substituents selected from Substituent

20 group A described above, (vi) a carboxyl group, (vii) a  $C_{1-6}$  alkoxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (viii) a  $C_{3-8}$  cycloalkyloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (ix) a  $C_{7-16}$

25 aralkyloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (x) a  $C_{6-14}$  aryloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (xi) a carbamoyl group, (xii) a mono- $C_{1-6}$  alkyl-carbamoyl group which may have 1 to 5

30 substituents selected from Substituent group A described above, (xiii) a di- $C_{1-6}$  alkyl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above, (xiv) a mono- $C_{6-14}$  aryl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above,

35 (xv) a di- $C_{6-14}$  aryl-carbamoyl group which may have 1 to 5

substituents selected from Substituent group A described above or

(xvi) a nitro group, or  $R^2$  and A or  $R^1$  may be taken together to

form a 5- to 14-membered ring containing 1 to 4 hetero atoms

selected from a nitrogen atom and an oxygen atom in addition to

5 carbon atoms, which may have 1 to 5 substituents selected from

Substituent group A described above;

each of  $R^3$  and  $R^4$  is any of the following (i) to (iii):

(i) a hydrogen atom,

(ii) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,

10  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or

$C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents

selected from Substituent group A described above,

(iii) an acyl group selected from formyl, carboxyl, carbamoyl,

$C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,

15  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,

$C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl

containing 1 to 3 hetero atoms selected from a nitrogen atom, a

sulfur atom and an oxygen atom in addition to carbon atoms, mono-

$C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  aryl-

20 carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic

carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen

atom, a sulfur atom and an oxygen atom in addition to carbon atoms,

$C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-

thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,

25  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-

membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms

selected from a nitrogen atom, a sulfur atom and an oxygen atom in

addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-

thiocarbamoyl, di- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-

30 thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered

heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected

from a nitrogen atom, a sulfur atom and an oxygen atom in addition

to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$

alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$

35 arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl, sulfino, sulfo,

$C_{1-6}$  alkoxy sulfanyl,  $C_{6-14}$  aryloxy sulfanyl,  $C_{1-6}$  alkoxy sulfonyl and  $C_{6-14}$  aryloxy sulfonyl, which may have 1 to 5 substituents selected from Substituent group A described above; or

$R^3$  and  $R^4$  may be taken together with the adjacent carbon atom

5 to form  $C_{3-8}$  cycloalkane or a 3- to 8-membered heterocycle, which may have respectively 1 to 3 substituents selected from  $C_{1-6}$  alkyl,  $C_{6-14}$  aryl,  $C_{7-16}$  aralkyl, amino, mono- $C_{1-6}$  alkylamino, mono- $C_{6-14}$  arylamino, di- $C_{1-6}$  alkylamino, di- $C_{6-14}$  arylamino and a 4- to 10-membered aromatic heterocyclic group,

10  $R^5$  is (i) a hydrogen atom, (ii) a cyano group, (iii) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, (iv) an acyl group selected

15 from formyl, carboxyl, carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen

20 atom in addition to carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$

25 cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to

30 carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,

35 sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$

arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl, sulfino, sulfo,  $C_{1-6}$  alkoxy sulfinyl,  $C_{6-14}$  aryloxy sulfinyl,  $C_{1-6}$  alkoxy sulfonyl and  $C_{6-14}$  aryloxy sulfonyl, which may have 1 to 5 substituents selected from

5 Substituent group A described above, or (v) a group represented by the formula  $-OR^{15}$  ( $R^{15}$  represents (a) a hydrogen atom, (b) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from

10 Substituent group A described above, or (c) an acyl group selected from formyl, carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms

15 selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in

20 addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a

25 sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a

30 sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$  alkoxy sulfinyl,  $C_{6-14}$  aryloxy sulfinyl,  $C_{1-6}$  alkoxy sulfonyl and  $C_{6-14}$  aryloxy sulfonyl,

35 which may have 1 to 5 substituents selected from Substituent group

A described above),

$R^6$  is any of the following (i) to (x) :

- (i) a hydrogen atom,
- (ii) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,
- 5  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above,
- (iii) an acyl group selected from formyl, carboxyl, carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,
- 10  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,
- 15  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$
- 20  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl, sulfino, sulfo,  $C_{1-6}$  alkoxy sulfinyl,  $C_{6-14}$  aryloxy sulfinyl,  $C_{1-6}$  alkoxy sulfonyl and  $C_{6-14}$  aryloxy sulfonyl, which may have 1 to 5 substituents selected from Substituent group A described above,
- (iv) a 5- to 14-membered heterocycle containing 1 to 4 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen

atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above,

- (v) a halogen atom,
- (vi) a group represented by the formula  $-OR^{16}$  ( $R^{16}$  represents
- 5 (i') a hydrogen atom, (ii') a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above,
- (iii') an acyl group selected from formyl, carbamoyl,  $C_{1-6}$  alkyl-10 carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono-15  $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-20 thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-25 thiocarbamoyl, di- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  30 alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$  alkoxyssulfinyl,  $C_{6-14}$  aryloxyssulfinyl,  $C_{1-6}$  alkoxyssulfonyl and  $C_{6-14}$  aryloxyssulfonyl, which may have 1 to 5 substituents selected from Substituent group A described above, or (iv') a 5- to 14-membered 35 heterocycle containing 1 to 4 hetero atoms selected from a

nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above),

- (vii) a group represented by the formula  $-SR^{17}$  ( $R^{17}$  represents
  - 5 (i') a hydrogen atom, (ii') a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above,
  - (iii') an acyl group selected from formyl, carbamoyl,  $C_{1-6}$  alkyl-10 carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono-15  $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-20 thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-25 thiocarbamoyl, di- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  30 alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$  alkoxyssulfinyl,  $C_{6-14}$  aryloxyssulfinyl,  $C_{1-6}$  alkoxyssulfonyl and  $C_{6-14}$  aryloxyssulfonyl, which may have 1 to 5 substituents selected from Substituent group A described above or (iv') a 5- to 14-membered 35 heterocycle containing 1 to 4 hetero atoms selected from a

nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above),

(viii) a group represented by the formula  $-S(O)_rR^{11}$  ( $R^{11}$  5 represents (i') a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above or (ii') a 5- to 14-membered heterocycle containing 1 to 4 hetero 10 atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above and r is 1 or 2) or

(ix) a group represented by the formula  $-NR^{18}R^{19}$  ( $R^{18}$  and  $R^{19}$  15 each represent (i') a hydrogen atom, (ii') a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, (iii') an acyl group selected from formyl, 20 carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to 25 carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl- 30 thiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, 35 thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$  alkyl-

thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,

5 sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$  alkoxyssulfinyl,  $C_{6-14}$  aryloxysulfinyl,  $C_{1-6}$  alkoxyssulfonyl and  $C_{6-14}$  aryloxysulfonyl, which may have 1 to 5 substituents selected from Substituent group

10 10 A described above or (iv') a 5- to 14-membered heterocycle containing 1 to 4 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above),

15  $R^7$  and  $R^8$  are each (i) a hydrogen atom or (ii) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, or  $R^7$  and  $R^8$  may be taken together with

20 the adjacent carbon atom to form  $C_{3-8}$  cycloalkane or a 3- to 8-membered heterocycle, which may have respectively 1 to 3 substituents selected from  $C_{1-6}$  alkyl,  $C_{6-14}$  aryl,  $C_{7-16}$  aralkyl, amino, mono- $C_{1-6}$  alkylamino, mono- $C_{6-14}$  arylamino, di- $C_{1-6}$  alkylamino, di- $C_{6-14}$  arylamino and a 4- to 10-membered aromatic heterocyclic group;

25  $R^9$  and  $R^{10}$  are each (i) a hydrogen atom or (ii) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, and

30  $Y$  is a methylene group which may have 1 or 2 substituents selected from Substituent group A described above.

3. The compound according to claim 1, wherein A is (1) a bond, (2) a group represented by the formula  $-CR^a=CR^b-$  ( $R^a$  and  $R^b$

each represent a hydrogen atom or a C<sub>1-6</sub> alkyl group), (3) a group represented by the formula -(CONH)<sub>p</sub>-(C(R<sup>c</sup>)(R<sup>d</sup>))<sub>q</sub>- (R<sup>c</sup> and R<sup>d</sup> each represent a hydrogen atom or a C<sub>1-6</sub> alkyl group, p represents 0 or 1 and q represent s 1 or 2), (4) a group represented by the formula -CH<sub>2</sub>OCH<sub>2</sub>- or (5) a group represented by the formula -OCH<sub>2</sub>-,

5 R<sup>1</sup> is (1) a cyano group, (2) a carboxyl group, (3) a C<sub>1-6</sub> alkoxy carbonyl group, (4) a carbamoyl group or (5) an N-mono-C<sub>1-6</sub> alkyl carbamoyl group,

R<sup>2</sup> is (1) a hydrogen atom, (2) a hydroxy group, (3) a C<sub>1-6</sub> alkoxy group, (4) a C<sub>7-16</sub> aralkyloxy group, (5) an amino group, (6) a mono-C<sub>1-6</sub> alkylamino group which may have one substituent selected from carboxyl, carbamoyl, quinolyl, phenoxy and pyridyl, (7) a mono-C<sub>7-16</sub> aralkylamino group which may have one substituent selected from a halogen atom, cyano, C<sub>1-6</sub> alkoxy, carboxyl and C<sub>1-6</sub> alkoxy carbonyl, (8) a mono-C<sub>6-14</sub> arylamino group, (9) a mono-C<sub>1-6</sub> alkyl carbonyl amine group which may have 1 to 3 substituents selected from a halogen atom, thienyl and C<sub>1-6</sub> alkoxy carbonyl-C<sub>1-6</sub> alkylthio, (10) a mono-C<sub>1-6</sub> alkylsulfonyl amine group, (11) a mono-C<sub>6-14</sub> aryl carbonyl amine group which may have one substituent selected from C<sub>1-6</sub> alkoxy and C<sub>1-6</sub> alkyl carbonyl amine, (12) a quinolyl carbonyl amine group, (13) a pyridyl carbonyl amine group which may have 1 or 2 halogen atoms, (14) an indolyl carbonyl amine group, (15) a N-C<sub>1-6</sub> alkyl-N-C<sub>1-6</sub> alkyl carbonyl amine group which may have 1 to 4 substituents selected from a halogen atom, C<sub>1-6</sub> alkoxy carbonyl and quinolyl, (16) a N-C<sub>1-6</sub> alkyl carbonyl-N-C<sub>7-16</sub> aralkyl amine group which may have 1 to 3 halogens, (17) a N-C<sub>1-6</sub> alkyl-N-pyridyl carbonyl amine group, (18) a C<sub>1-6</sub> alkylidene amine group which may have one di-C<sub>1-6</sub> alkyl amine, (19) a mono-C<sub>1-6</sub> alkylureido group which may have one C<sub>1-6</sub> alkoxy carbonyl, (20) a di-C<sub>1-6</sub> alkylureido, (21) a mono-C<sub>6-14</sub> arylureido group, (22) a 1-imidazolidinyl group which may have 1 to 3 substituents selected from C<sub>1-6</sub> alkyl and oxo, (23) a C<sub>1-6</sub> alkyl group, (24) a C<sub>1-6</sub> alkoxy carbonyl group, (25) a nitro group or (26) a 1-pyrrolidinyl group, or

35 R<sup>2</sup> and A or R<sup>1</sup> may be taken together with the adjacent carbon atom

to form a nitrogen-containing 5- to 7-membered ring which may have 1 to 3 substituents selected from (1) a hydroxy group, (2)  $C_{1-6}$  alkyl which may have one  $C_{1-6}$  alkoxy-carbonyl, (3)  $C_{7-16}$  aralkyl, (4)  $C_{6-14}$  aryl and (5) oxo,

5         $R^3$  and  $R^4$  are each a  $C_{1-6}$  alkyl group,

$R^5$  is a hydrogen atom,

$R^6$  is a  $C_{1-6}$  alkoxy group,

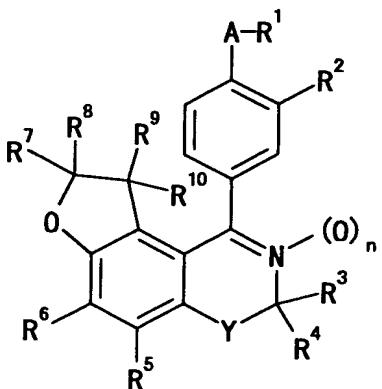
$R^7$  and  $R^8$  are each a  $C_{1-6}$  alkyl group,

$R^9$  and  $R^{10}$  are each a hydrogen atom,

10       $Y$  is a methylene group and

$n$  is 0.

4. A compound represented by the formula



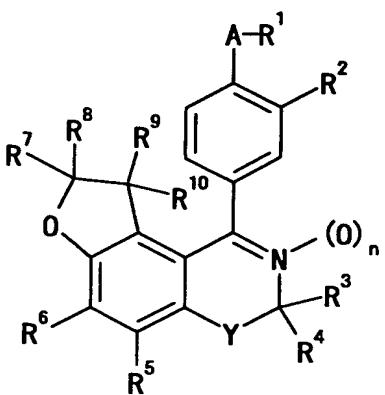
15      wherein A is (1) a bond, (2) a group represented by the formula  $-CH=CH-$ , (3) a group represented by the formula  $-CONH-C(R^c)(R^d)-$  ( $R^c$  and  $R^d$  are each a hydrogen atom or a  $C_{1-6}$  alkyl group), or (4) a group represented by the formula  $-OCH_2-$ ,

20       $R^1$  is (1) a cyano group, (2) a carboxyl group, (3) a  $C_{1-6}$  alkoxy carbonyl group, (4) a carbamoyl group or (5) an N-mono- $C_{1-6}$  alkyl carbamoyl group,

25       $R^2$  is (1) a hydroxy group, (2) a  $C_{1-6}$  alkoxy group, (3) a  $C_{7-16}$  aralkyloxy group, (4) an amino group, (5) a mono- $C_{1-6}$  alkylamino group which may have one substituent selected from carboxyl, carbamoyl, quinolyl, phenoxy and pyridyl, (6) a mono- $C_{7-16}$  aralkylamino group which may have one substituent selected from a halogen atom, cyano,  $C_{1-6}$  alkoxy, carboxyl and  $C_{1-6}$  alkoxy carbonyl,

(7) a mono- $C_{6-14}$  arylamino group, (8) a mono- $C_{1-6}$  alkylcarbonylamino group which may have 1 to 3 substituents selected from a halogen atom, thienyl and  $C_{1-6}$  alkoxycarbonyl- $C_{1-6}$  alkylthio, (9) a mono- $C_{1-6}$  alkylsulfonylamino group, (10) a mono- $C_{6-14}$  arylcarbonylamino group  
 5 which may have one substituent selected from  $C_{1-6}$  alkoxy and  $C_{1-6}$  alkylcarbonylamino, (11) a quinolylcarbonylamino group, (12) a pyridylcarbonylamino group which may have 1 or 2 halogen atoms, (13) an indolylcarbonylamino group, (14) a  $N-C_{1-6}$  alkyl- $N-C_{1-6}$  alkylcarbonylamino group which may have 1 to 4 substituents  
 10 selected from a halogen atom,  $C_{1-6}$  alkoxycarbonyl and quinolyl, (15) a  $N-C_{1-6}$  alkylcarbonyl- $N-C_{7-16}$  aralkylamino group which may have 1 to 3 halogens, (16) a  $N-C_{1-6}$  alkyl- $N$ -pyridylcarbonylamino group, (17) a  $C_{1-6}$  alkylideneamino group which may have one di- $C_{1-6}$  alkylamino, (18) a mono- $C_{1-6}$  alkylureido group which may have one  
 15  $C_{1-6}$  alkoxycarbonyl, (19) a di- $C_{1-6}$  alkylureido group, (20) a mono- $C_{6-14}$  arylureido group, (21) a 1-imidazolidinyl group which may have 1 to 3 substituents selected from  $C_{1-6}$  alkyl and oxo, (22) a  $C_{1-6}$  alkyl group, (23) a  $C_{1-6}$  alkoxycarbonyl group, (24) a nitro group or (25) a 1-pyrrolidinyl group, or  $R^2$  and  $A$  or  $R^1$  may be  
 20 taken together with the adjacent carbon atom to form a nitrogen-containing 5- to 7-membered ring which may have 1 to 3 substituents selected from (1) a hydroxy group, (2) a  $C_{1-6}$  alkyl group which may have one  $C_{1-6}$  alkoxy-carbonyl, (3) a  $C_{7-16}$  aralkyl group, (4) a  $C_{6-14}$  aryl group and (5) an oxo group,  
 25  $R^3$  and  $R^4$  are each a  $C_{1-6}$  alkyl group,  
 $R^5$  is a hydrogen atom,  
 $R^6$  is a  $C_{2-6}$  alkoxy group,  
 $R^7$  and  $R^8$  are each a  $C_{1-6}$  alkyl group,  
 $R^9$  and  $R^{10}$  are each a hydrogen atom,  
 30  $Y$  is a methylene group, and  
 $n$  is 0, or a salt thereof.

5. A compound represented by the formula



wherein A is (1) a group represented by the formula  $-CR^a=CR^b-$  ( $R^a$  and  $R^b$  are each a hydrogen atom or a  $C_{1-6}$  alkyl group), (2) a group represented by the formula  $-(CONH)_p-(C(R^c)(R^d))_q-$  ( $R^c$  and  $R^d$  are each a hydrogen atom or a  $C_{1-6}$  alkyl group,  $p$  is 0 or 1 and  $q$  is 1 or 2), (3) a group represented by the formula  $-CH_2OCH_2-$  or (4) a group represented by the formula  $-OCH_2-$ ,

10  $R^1$  is (1) a carboxyl group, (2) a  $C_{1-6}$  alkoxy carbonyl group, (3) an N-mono- $C_{1-6}$  alkyl carbamoyl group or (4) a carbamoyl group,

$R^2$  is a hydrogen atom,

$R^3$  and  $R^4$  are each a  $C_{1-6}$  alkyl group,

$R^5$  is a hydrogen atom,

$R^6$  is a  $C_{2-6}$  alkoxy group,

15  $R^7$  and  $R^8$  are each a  $C_{1-6}$  alkyl group,

$R^9$  and  $R^{10}$  are each a hydrogen atom,

$Y$  is a methylene group, and

$n$  is 0, or a salt thereof.

6. The compound according to claim 4, wherein A is (1) a bond or (2) a group represented by the formula  $-CH=CH-$ .

7. The compound according to claim 5, wherein A is (1) a group represented by the formula  $-CH=CH-$ , (2) a group represented by the formula  $-(C(R^c)(R^d))-$  ( $R^c$  and  $R^d$  each represent a hydrogen atom or a  $C_{1-6}$  alkyl group) or (3) a group represented by the formula  $-CH_2OCH_2-$ .

8. The compound according to claim 4, wherein R<sup>1</sup> is a carboxyl group or a carbamoyl group.

9. The compound according to claim 5, wherein R<sup>1</sup> is a 5 carboxyl group.

10. The compound according to claim 4, wherein R<sup>2</sup> is (1) a C<sub>1-6</sub> alkoxy group, (2) a mono-C<sub>1-6</sub> alkylamino group, (3) a mono-C<sub>7-16</sub> aralkylamino group, (4) a quinolylcarbonylamino group or (5) a 10 pyridylcarbonylamino group.

11. The compound according to claim 4 or 5, wherein R<sup>3</sup> and R<sup>4</sup> are each methyl.

15 12. The compound according to claim 4 or 5, wherein R<sup>6</sup> is ethoxy.

13. The compound according to claim 4 or 5, wherein R<sup>7</sup> and R<sup>8</sup> are each methyl.

20 14. The compound according to claim 4, which is 4-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-2-[(phenylmethyl)amino]benzoic acid, 4-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-2-(ethylamino)benzoic acid, (E)-3-[4-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-2-methoxyphenyl]-2-propenoic acid, 4-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-2-[(2-quinolinylcarbonyl)amino]benzoic acid, 4-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-2-[(2-pyridinylcarbonyl)amino]benzene acetic acid, N-[2-(aminocarbonyl)-5-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)phenyl]-2-pyridinecarboxamide or a salt thereof.

35 15. The compound according to claim 5, which is [[4-(6-

ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)phenyl]methoxy]acetic acid, 4-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)- $\alpha$ , $\alpha$ -dimethylbenzene acetic acid or a salt thereof.

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16. The pharmaceutical composition comprising the compound according to claim 1 or a prodrug thereof.

17. The pharmaceutical composition according to claim 16, 10 which is a phosphodiesterase IV inhibitor.

18. The pharmaceutical composition according to claim 16, which is a prophylactic and/or therapeutic agent against inflammatory diseases, atopic dermatitis, allergic rhinitis, 15 asthma, chronic obstructive pulmonary diseases, chronic rheumatoid arthritis, autoimmune diseases, depression, Alzheimer's dementia, memory disorders, osteoporosis, diabetes or atherosclerosis.

19. A method of inhibiting phosphodiesterase IV, which 20 comprises administering to a mammal an effective amount of the compound according to claim 1 or a prodrug thereof.

20. A method of preventing and/or treating inflammatory diseases, atopic dermatitis, allergic rhinitis, asthma, chronic 25 obstructive pulmonary diseases, chronic rheumatoid arthritis, autoimmune diseases, depression, Alzheimer's dementia, memory disorders, osteoporosis, diabetes or atherosclerosis, which comprises administering to a mammal an effective amount of the compound according to claim 1 or a prodrug thereof.

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21. Use of the compound according to claim 1 or a prodrug thereof for manufacturing a phosphodiesterase IV inhibitor.

22. Use of the compound according to claim 1 or a prodrug 35 thereof for manufacturing a prophylactic and/or therapeutic agent

against inflammatory diseases, atopic dermatitis, allergic rhinitis, asthma, chronic obstructive pulmonary diseases, chronic rheumatoid arthritis, autoimmune diseases, depression, Alzheimer's dementia, memory disorders, osteoporosis, diabetes or  
5 atherosclerosis.